Co-funded by the
Erasmus+ Programme
of the European Union

Contents of the presentations

December 16th - 18th, 2020

Vladimir Janis

Graphic tools in mathematics and life sciences

> > The TIKZ package is mostly used in mathematics and not very common in life sciences, like biology, chemistry, or geography. The presentation shows methods of simple creation of professional images that can be of a great help in the education especially for the early-stage university teachers who prepare their teaching materials. The presentation will be followed by individual trainings of the participants, supervised by the instructor.

Lukas Laffers

Causality from non-experimental data

> > Basic statistical methods are common for nearly all university subjects, both in nature sciences and humanities. The presentation shows some nonstandard ways of handling data in cases when a classical experiment is impossible. Examples of such are questions like:
Will minimum wage affect unemployment?
Does higher education help you to earn more?
Does classroom size matter for the academic performance?
In the talk, we will cover some cases where it is possible to say something about the underlying causal relationships.

Romana Schubertova

Mobile applications for the collection of biological data in citizen science projects

> > The phenomenon of citizen science, in which the public participates in the collection or evaluation of data during the research, is currently strongly supported by the existence of tools that allow simple and accurate collection and transmission of information. Through the involvement of students in citizen science projects, we can support not only their science process skills and the acquisition of knowledge, but also civic engagement and involvement in environmental issues. We will get acquainted with international and local citizen science projects, which use mobile applications to collect data and can be used in the educational process.

Ingrid Turisová

Mobile applications for plant species identification

> > When teaching botany, we emphasize the practical knowledge and determination of species, which is also the starting point for many botanical subdisciplines (phytocoenology, plant ecology, habitat determination, etc.). In addition to the classic determination keys, it is currently a popular tool to determine plants using mobile applications, which we will present during the presentation. We will also present some virtual floristic atlases that can be used in the educational process.

Vladimir Janis

Dangers of multitasking

> > The presentation shows some possible negative aspects of the improper use of digital technologies. Such use may lead to fragmentation of the information flow and as a result to loosing the students' concentration. Results of practical experiments will be presented.
>
> **Romana Schubertova**

The use of online tools to support constructivist approaches and the development of students' skills - case analysis

> > Although the transition to online education is accompanied by a number of limitations and the adaptation of standard teaching procedures is necessary, practice has shown that some of the online tools can suitably support students' work on problem tasks, inquiry-based activities or case studies.We will analyze specific cases of online teaching, in which the sharing of data and documents or group work of students in an online environment was used effectively. The assignments for students thus corresponded to a constructivist approach, in which they built their own knowledge structure through active work (in an online environment).